

REMARKS

As discussed in detail below, the Kataoka patent discloses an apparatus for controlling tension in a film of sheet during "take-out" and "take-up". The latter term "take-up" is used by Kataoka to refer to the operation whereby a film or sheet is wound into a roll on a take-up reel. The Applicant's original claims sought to use the term "take-up" in a sense different than winding on a take-up reel. To avoid possible confusion, the Applicant has substituted the term "accumulator" in place of "take-up device" in claims 1, 2, 5 and 7-10. Also new dependent claims 41-45 have been added. This application now has 19 total claims. No fee for extra claims is required.

Claim 14 has been amended to depend from claim 7 instead of claim 1, thereby providing proper antecedent bases for the term "said second portion of each work cycle". [Claim 1 does not recite "a second portion" of each work cycle.]

Also the "Brief Description of the Invention" section of the specification has been amended to conform to the pending elected claims.

Turning to the office action, the Applicant gratefully acknowledges the indication from the Examiner that claims 7-10, 12 and 13 would be allowable if suitably amended in independent form. However, the Applicant has declined the invitation to rewrite claim 7 in independent form in the belief that claim 1, on which claim 7 depends, will prove to be allowable.

In response to the objection to the disclosure, the "seal zone 40" has been changed to "seal zone 48" in conformity with the numbering that appears in Figure 2 of this application. Also the Title of the Invention has been amended in accordance with the Examiner's suggestion.

Claims 4 and 40 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The Applicant traverses this ground of rejection for the following reasons.

With regard to claim 4, the Examiner asserts that the term "ball screw" is indefinite. The Applicant traverses the rejection of claim 4 on the ground that the term "ball screw" is definite and well known in the art. A search of the USPTO website would reveal hundreds of U.S. patents that use the term "ball screw". The Academic Press Dictionary of Science and Technology, Academic Press, Inc., New York, 1992, defines "ball screw" as follows: "*Mechanical Engineering*. a device that converts rotation to linear motion, consisting of a threaded nut linked to a threaded shaft by friction-reducing ball bearings constrained to move in the threads." The Applicant submits that this is the ordinary meaning of the term "ball screw" and that since the Applicant did not indicate any deviation from this ordinary meaning in his specification, the term "ball screw" in claim 4 should be given this ordinary meaning. The Applicant respectfully submits that this ordinary meaning is not indefinite, but rather is well understood by mechanical engineers.

With regard to claim 40, the Applicant notes that claim 40 is a method claim that mistakenly depends from system claim 1 and should not have been included in elected Group I. The rejection of claim 40 has been mooted by cancellation of that claim.

Lastly, claims 1-6, 11, 14 and 40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Natterer (US 5,105,603) in view of Applicant's background and further in view of Kataoka (US 4,775,086). As applied to amended claim 14 and canceled claim 40, this ground of rejection is now moot. As applied to claims 1-6 and 11, the Applicant traverses this ground of rejection for the following reasons.

In support of the rejection of claim 1, the Examiner concedes that the Natterer patent does not disclose a zipper take-up device, but asserts that the Kataoka patent discloses a take-up tension control device and that it would have been obvious to have added a zipper take-up device to the system of Natterer, "as suggested by Kataoka, in order to provide the system with a tension controller for controlling the tension in the film or the zipper being taken out".

The foregoing rationale for the obviousness rejection overlooks the fact that Applicant's claim 1 does not recite any tension control means. Therefore it is of no significance, vis-à-vis claim 1, that Kataoka suggests providing a tension controller. To the extent that the Examiner believes Applicant's accumulator to be a tension control device, that is a

misunderstanding. In Applicant's system it is the torque control device (e.g., magnetic particle clutch 66 in Figure 3) that controls the tension in the zipper material, not the zipper accumulator 106 (see Figure 4).

The true issue to have been decided in the outstanding office action with respect to claim 1 (which does not recite tension control) should have been: "Would it have been obvious to incorporate a zipper accumulator in the system of Natterer in view of the teaching of Kataoka? The Applicant respectfully submits that the answer to this question is in the negative for the following reasons.

The dancer roller 9 in Figure 5 of Kataoka is not an accumulator, but rather is a displacement device that displaces due to changes in tension of the stretched sheet. [See col. 6, lines 59-61.] These displacements are detected by a displacement detector 11. [See col. 6, lines 52-53.] The output signal of the displacement detector is fed to the speed controller 8 for controlling the speed of the take-out roller drive motor M1. [See col. 6, lines 55-57.] When the dancer roller is displaced due to a change in tension of the stretched sheet or a change in the line speed, the speed controller 8 immediately produces a signal for returning the dancer roller to a reference position. [See col. 6, lines 59-63.] This is significant in two respects.

First, since the dancer roller merely oscillates about a reference position due to the forces of gravity, it should be readily apparent that such a device - which is not driven to

extend and retract, as Applicant's accumulator does - cannot positively "accumulate" and thereafter release the film. The dancer roller 9 of Kataoka descends due to its own weight, which weight is countered by a lifting force exerted by a drive control mechanism 10. Kataoka does not disclose that the dancer roller can be driven downward to accumulate film. Moreover, the typical function of a dancer roller is to take up slack in an unwound material, ala the weighted dancer roll 60 shown in Applicant's Figure 3. This occurs while the material upstream and downstream of the dancer roller is advancing. In contrast, an accumulator accumulates the material while an upstream portion of the material is advancing and a downstream portion of the material is stationary. The very purpose of Applicant's accumulator is to allow such differential movement of the zipper material. Applicant's claim 1 has been amended to clarify that the zipper accumulator accumulates zipper material while a portion of the zipper material at a downstream joining station is stationary. The dancer roller of Kataoka performs no such function and does not constitute an "accumulator" in the sense that the latter term is being used by the Applicant. Since Kataoka does not disclose an accumulator, it could not have been obvious to incorporate an accumulator in the Natterer system in view of Kataoka.

Second, the dancer roller of Kataoka responds to the tension in the film; the film tension is not controlled by the dancer roller. Accordingly, it makes no sense to state (as the office action does) that it would have been obvious to

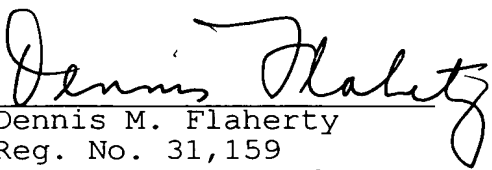
incorporate the dancer roller of Kataoka in the system of Natterer in order to control film tension. Not only does the dancer roller of Kataoka not control tension, Applicant's claim 1 does not recite tension control means!

Thus, the rejection of claim 1 as being obvious over Natterer in view of admitted prior art and further in view of Kataoka is flawed on multiple levels. The Examiner has found it obvious to incorporate in the Natterer system a device (i.e., the dancer roll of Kataoka) that is not an accumulator for the purpose of performing a function (i.e., tension control) which it is incapable of performing. This falls far short of a *prima facie* showing of obviousness. In the absence of a proper rejection of independent claim 1, there is no basis for rejecting claims 2-14 and 41-45 dependent thereon.

In view of the foregoing, the Applicant submits that this application is now in condition for allowance. Reconsideration of the application and allowance of claims 1-14 and 41-45 are hereby requested.

Respectfully submitted,

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Date


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